

CAVERNOUS HEMAGIOMA OF THE MAXILLARY SINUS: A RARE CAUSE OF EPISTAXIS

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Abstract

Background: A case of cavernous hemangioma of the maxillary.

Method: A 25 year old lady presented with history of nasal obstruction, recurrent epistaxis and headache. On exam she had a mass in the left osteomeatal complex that was friable and bled easily on palpation. Computerized tomography of the paranasal sinuses 2mm coronal cuts showed complete opacification of the left maxillary sinus and magnetic resonance imaging revealed a 1.5 × 3 × 2.5 cm lobulated soft tissue mass lesion that enhanced with intravenous gadolinium administration, but no flow-void signals were present. Histologically, the mass was made up of dilated and anastomosing blood vessels.

Result: The radiologic findings may be attributed to a malignant lesion especially when extensive bone erosion is present.

Conclusion: Cavernous hemangioma of the maxillary sinus is a very rare benign entity that presents with recurrent epistaxis and nasal obstruction.

Key Words: cavernous hemangioma; maxillary sinus; epistaxis; nasal obstruction; headache

Introduction

Hemangiomas are the most common vascular lesions of the head and neck. Typical locations include face, scalp, orbit, oral cavity and nasal cavities. They are benign lesions and have been classified by Batsakis as capillary, cavernous, mixed and proliferative¹. The overwhelming majority of sinonasal hemangiomas are capillary, whereas the cavernous type is extremely rare. Cavernous hemangiomas are common in adults and are more frequently encountered in women². Engels et al was the first to describe such an entity in 1990, and since then only few cases of cavernous hemangiomas originating from the maxillary sinus have been reported in the literature^{3,4}. We would like to present a rare case of cavernous hemangioma of the maxillary sinus with a review of the clinical picture, diagnostic work-up and therapeutic approaches.

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Case report

A 25 year old lady presented with history of nasal obstruction, recurrent epistaxis and headache. There was no history of nasal discharge, postnasal drip, or facial swelling. Medical history was essentially negative. On physical exam, anterior rhinoscopy revealed a mass in the left osteomeatal complex that was friable and bled easily on palpation. Computerized tomography of the paranasal sinuses 2 mm coronal cuts showed complete opacification of the left maxillary sinus with partial obliteration of the ethmoidal and frontal air cells on the same side. There was also a septal deviation to the left with a right concha bullosa. Magnetic resonance imaging of the paranasal sinuses, with axial, sagittal and coronal T1 and T2 FSE weighted scans at 4 mm interval, revealed a $1.5 \times 3 \times 2.5$ cm lobulated soft tissue mass lesion situated mainly in the left maxillary sinus, extending into the osteomeatal complex and the medial wall of the maxillary sinus and part of the ethmoid air cells. Part of the mass was also seen merging or abutting the left middle turbinate and nasal septum. There was enhancement following IV gadolinium administration, but no flow-void signals were present (Fig. 1; a & b). Patient underwent left Caldwell-luc procedure with endoscopic excision of the

maxillary mass. Histologically, the mass was made up of dilated and anastomosing blood vessels. The mucosa was largely eroded and expanded by hemorrhagic and fibrinous exudates. The diagnosis was consistent with an ulcerative cavernous hemangioma of the left maxillary sinus.

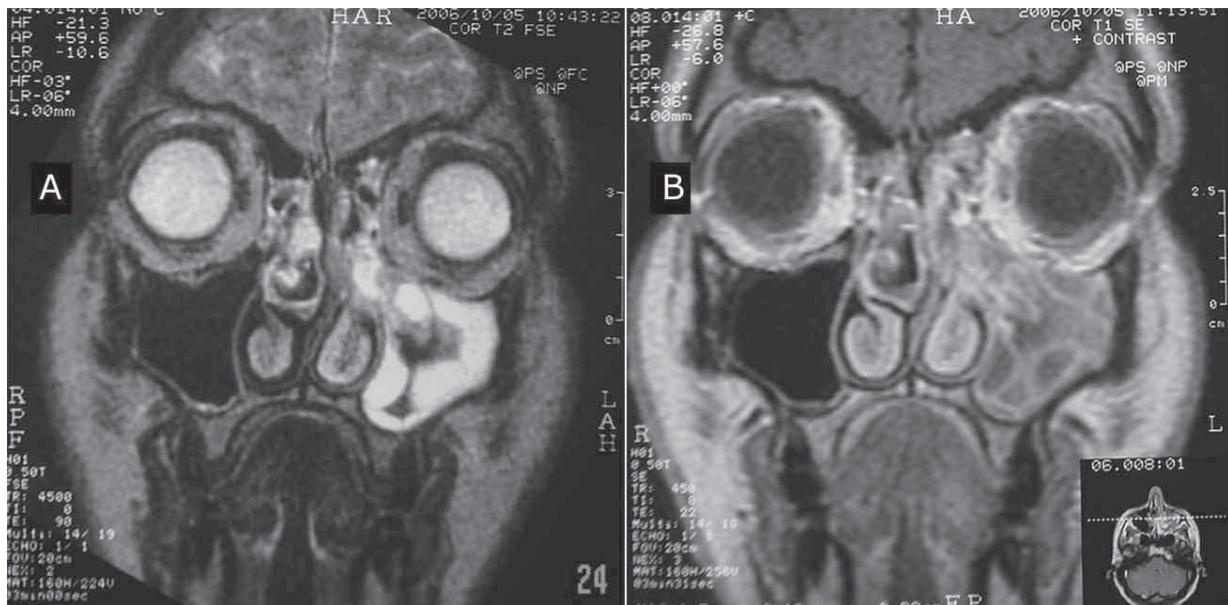
Discussion

Cavernous hemangiomas have been described by the International Society for the Study of Vascular Anomalies (ISSVA) as pseudotumoral vascular anomalies rather than true neoplasms⁵. They are considered by many to be similar to sinusoidal hemangiomas⁶. The sinonasal cavity is an unusual site for cavernous hemangiomas. Unlike capillary hemangiomas which arise mostly from the septum or nasal vestibule, cavernous hemangiomas originate from the lateral nasal wall or medial wall of the maxillary sinus. There has also been a report of a cavernous hemangioma of the sphenoid sinus and another originating from the infra-orbital nerve canal^{7,8}.

Histologically cavernous hemangiomas are composed of large dilated vessels, arranged in a lobular or diffuse pattern, and lined by flattened endothelium.

Fig. 1

Coronal T2 FSE weighted scans at 4 mm interval (a), and T1 with contrasts (b) showing a $1.5 \times 3 \times 2.5$ cm lobulated soft tissue mass lesion situated mainly in the left maxillary sinus, extending into the osteomeatal complex, the medial wall of the maxillary sinus and part of the ethmoid air cells. Part of the mass is also seen merging or abutting the middle turbinates and nasal septum. There was enhancement following IV gadolinium administration, but no flow-void signals suggestive of a vascular tumor.



As pointed by Hellquist, these tumors tend to arise from the bony tissue of the sinonasal tract and tend to be enclosed by bony trabeculae⁹. Grossly, cavernous hemangiomas of the maxillary sinus are solitary, well demarcated masses that may arise from the medial wall of the maxillary sinus or from the osteo-meatal complex with extension laterally. The clinical picture of these vascular anomalies may be misleading. They may remain quiescent or display intermittent pattern of growth. Clinically, cavernous hemangiomas may be locally aggressive and destructive by virtue of the pressure exerted. Nevertheless, they do not undergo malignant transformation. The differential diagnosis of a sinonasal hemangioma includes polypoid and cystic masses, inverted papillomas, mucoceles or virtually any benign and malignant lesion of the paranasal sinuses. A vascular lesion with a mucocele-like appearance radiologically should not mislead the surgeon. At times they may be mistaken for a neuroma when the location is proximal to the intra-orbital canal. Symptoms of cavernous hemangiomas of the sinonasal tract include epistaxis, facial swelling, nasal obstruction and bulging of the eye⁴. In our case, patient presented mainly with recurrent epistaxis and nasal congestion.

Pre-operative imaging is mandatory for proper diagnosis despite the limitations of these studies. Computerized Tomography and Magnetic Resonance Imaging help you delineate the extent of the lesion, its vascularity, consistency and relation to the surrounding structures. Yet, it is important to keep in mind that none of these radiologic findings are pathognomonic. For instance, even though bony changes in patients with cavernous hemangiomas usually appear benign on imaging studies, there have been reports of bone

erosion with extensive destruction of the skull base, often mistaken as a radiologic feature of the more common malignant tumors of the sinonasal tract. Hence the appearance of substantial bone erosion should not mislead the radiologist or primary physician to the false diagnosis of a malignant tumor. Computerized tomography with contrast shows usually non homogeneous enhancement in cases of a vascular tumor, whereas Magnetic resonance imaging reveals hyperintense signal on T2- weighted images^{10, 11}. Angiography is always warranted in case of suspicion and super selective angiography will enable you to demonstrate the vascularity of these tumors. Embolization also becomes a means to avoid undue intra-operative hemorrhage.

The main treatment of cavernous hemangiomas is surgical with radiation therapy being reserved for inaccessible lesions. The surgical management varies from complete resection to local resection sparing vital structures. The approach can be either open or endoscopic with partial resection of the medial maxillary wall or combined, which was the case in our patient. Laser excision and steroid therapy have no role in the management of these lesions.

Conclusion

A patient presenting with history of recurrent epistaxis and nasal obstruction is very common. The work-up which includes nasal endoscopy and radiologic imaging may not lead the physician to the diagnosis of sinonasal cavernous hemangiomas in view of the misleading common clinico-radiologic findings. A high index of suspicion is needed to avoid extensive surgery and unnecessary morbidity.

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